

The carapace is much deeper and broader, has more prominent ridges and stronger tubercles than in *S. inermis*, and the sculpturing of the shields is coarser. Comparison of specimens of the same size shows the head to be smaller and the interorbital width to be greater in *S. robustus* than in *S. inermis*. In *S. inermis* the profile of the snout is convex; in *S. robustus* it is concave.

XXIX.—New or little-known Tipulidæ (*Diptera*).—LXI.
Neotropical Species. By CHARLES P. ALEXANDER,
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THE species described at this time are virtually all from Peru, having been taken in Junin and Huanuco by Messrs. Paprzycki and Woytkowski, very efficient collectors of these fragile and neglected flies. One single specimen from Abitagua, Ecuador, collected by MacIntyre, has been added as a paratype of this species. I am greatly indebted to the various collectors for this collaboration in making known the rich fauna of Tropical America. The types of the novelties are preserved in my collection of these flies.

Limonia (*Limonia*) *dicax*, sp. n.

Allied to *lawlori*; general coloration dark liver-brown; rostrum and antennæ black; halteres with knobs black; femora brown, more yellowish basally, blackened at tips; tibiæ and tarsi black; wings with ground-colour strongly infuscated, especially the radial field; costal portion of wing variegated by four whitish areas before and beyond origin of *Rs* and the stigma; darker seams along cord and outer end of cell 1st *M*₂; stigmal trichia present; *Sc* long; abdomen brownish black, the proximal sternites more or less brightened on basal portions.

Female.—Length about 8.5–9 mm.; wing 10–11 mm.

Rostrum polished black; palpi dull black. Antennæ black throughout; flagellar segments oval, with short dark apical pedicels; longest verticils unilaterally arranged, nearly twice the length of the segments; terminal segment very long, twice the penultimate,

strongly constricted at mid-length to simulate two distinct segments. Head brownish black; anterior vertex reduced to a linear strip or actually interrupted by the tangential contact of the eyes.

Pronotum and mesonotum deep liver-brown, polished, the median area of scutum and the scutellum more pruinose. Pleura dark liver-brown. Halteres with stem obscure yellow, knob black. Legs with the coxæ liver-brown; trochanters obscure yellow; femora brown, more yellow basally, the tips black; tibiæ and tarsi black. Wings with the ground-colour strongly infuscated, especially the radial field, the more posterior cells paler brown; conspicuous dark clouds at origin of *Rs*, fork of *Sc*, stigma, and as seams along cord and outer end of cell 1st M_2 ; marginal dark clouds at ends of longitudinal veins, more distinct in median field; cells *C* and *Sc* more yellow; conspicuous whitened areas before and beyond the dark mark at origin of *Rs* and again before and beyond the stigma, in cases with one or more of these areas reduced in size; veins brown, *Sc* more yellow. Stigmal area with trichia. Venation: *Sc* long, Sc_1 ending shortly before level of fork of *Rs*, Sc_2 near its tip; *Rs* long, angulated to weak-spurred at origin; cell 1st M_2 long, its inner end arcuated, subequal to or longer than vein M_{1+2} beyond it; *m-cu* subequal to or longer than the distal section of Cu_1 , at or shortly before fork of *M*.

Abdomen brownish black, the more proximal sternites somewhat brightened on basal ring; genital shield and valves of ovipositor black, the cerci gently upcurved.

Hab. Peru (Junin).

Holotype, ♀, Huacapistana, Tarma, altitude 3600–5400 feet, February 25, 1940 (*Woytkowski*). *Paratopotypes*, 2 ♀♀, March 3–9, 1940.

Limonia (*Limonia*) *dicax* is readily told from all other members of the *lawlori* group by the unusual pattern of the wings. Members of the group have veins *Sc* and *Rs* very long, stigmal trichia usually present, and the terminal segment of antenna very long and strongly constricted at near mid-length.

Limonia (*Limonia*) *huacapistanæ*, sp. n.

Allied to *lawlori*; general coloration yellow, the pronotum and præscutum with a very conspicuous median

black stripe, on the posterior sclerites of mesonotum even more extensive but paling to dark brown; antennæ black, flagellar segments oval with short glabrous apical pedicels; pleura and pleurotergite uniformly yellow; legs black, the femora with a narrow obscure yellow ring; wings pale yellow, restrictedly patterned with dark brown; stigma pale brown, hairy; Sc_1 ending about opposite two-thirds the length of Rs ; basal section of R_{4+5} arcuated; abdominal tergites broadly darkened medially just before the pale posterior borders.

Female.—Length about 11 mm.; wing 10.5 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, with short glabrous apical pedicels. Head black, the front and anterior vertex grey pruinose; anterior vertex reduced to a linear strip that is only about one-fourth as wide as the diameter of scape.

Pronotum and præscutum yellow, with a continuous, very conspicuous, black median stripe, behind the suture more brownish but covering almost all the area, only the outer portions of the scutal lobes, the parascutella, and the pleurotergite brightening to yellow; surface of scutellum and mediotergite insensibly pruinose. Pleura and pleurotergite, with the dorsopleural membrane, uniformly yellow. Halteres obscure yellow. Legs with the coxæ and trochanters yellow; femora black, with a narrow, obscure yellow subterminal ring, this shorter than the blackened apex; tibiæ black, tarsi brownish black; claws with conspicuous teeth. Wings pale yellow, the costal and outer radial fields more brownish yellow; a restricted dark brown pattern, as follows:—Origin of Rs ; fork of Sc ; free tip of Sc_2 ; cord and outer end of cell 1st M_2 ; small marginal spots at ends of all longitudinal veins; stigma pale brown, with several macrotrichia; veins yellow, darker in the infuscated portions. Venation: Sc long, Sc_1 ending about opposite two-thirds Rs , Sc_2 at its tip; Rs angulated at origin; R_2 lying shortly beyond level of free tip of Sc_2 ; basal section of R_{4+5} strongly arcuated; $m-cu$ at or before fork of M .

Abdomen obscure brownish yellow, the tergites broadly darkened medially just before the pale posterior borders; genital segment obscure yellow. Ovipositor with the cerci very small and slender, upcurved.

Hab. Peru (Junin).

Holotype, ♀, Huacapistana, Tarma, altitude 3600–5400 feet, February 25, 1940 (*Woytkowski*).

Limonia (*Limonia*) *huacapistanæ* is closest to *L. (L.) immodica* Alexander (south-eastern Brazil), *L. (L.) lawlori* Alexander (Panama to Ecuador), *L. (L.) lustralis* Alexander (Ecuador), *L. (L.) roraimæ* Alexander (Venezuela) and *L. (L.) sanctæ-martæ* Alexander (Colombia), differing from all in the pattern of the body, legs and wings. All of the above, with the exception of *roraimæ*, have several stigmal trichia lying proximad of vein R_2 .

Limonia (*Neolimnobia*) *paprzyckii*, sp. n. (Figs. 1 & 2.)

General coloration yellow, the mesonotum narrowly but conspicuously patterned with black; legs black, the femora with a very narrow yellow ring at about four-fifths the length; wings pale yellow, restrictedly patterned with dark brown; *Sc* short; *Rs* in longitudinal alignment with R_{2+3} ; supernumerary cross-vein lying far distad; *m-cu* before fork of *M*; abdomen yellow, the tergites with posterior borders narrowly darkened; rostral spines of male hypopygium very short and acute.

Male.—Length about 4 mm.; wing 4.5 mm.

Female.—Length about 5 mm.; wing 5 mm.

Rostrum and palpi black. Antennæ with scape black, pedicel obscure yellow, flagellum black; basal flagellar segments oval, the outer ones broken. Head buffy yellow, the central portion of anterior vertex darkened.

Pronotum darkened medially and on anterior portion, the remainder yellow. Mesonotum pale yellow, conspicuously patterned with black, including a narrow median vitta on præscutum that is still narrower on posterior half, at the suture forking, with a branch occupying the mesal edge of each scutal lobe; posterior border of scutellum darkened; mediotergite with a narrow but conspicuous central blackening. Pleura yellow. Halteres pale yellow, the apex of knob infuscated. Legs with coxæ and trochanters pale yellow; remainder of legs black, the femora with a very narrow to scarcely evident yellow ring at near four-fifths the length; extreme femoral bases brightened. Wings (fig. 1) pale yellow, restrictedly but conspicuously patterned with dark brown, the areas arranged as follows:—Arculus; fork of *Sc* and origin of *Rs*; free tip of Sc_2 and R_2 ; cord

and outer end of cell 1st M_2 ; supernumerary cross-vein in cell R_3 and tip of vein R_3 beyond it; smaller marginal areas at ends of all longitudinal veins; a larger area in cell 1st A near outer end of vein 2nd A ; veins yellow, conspicuously darkened in the patterned areas. Venation: Sc short, Sc_1 ending just beyond the rectangular origin of R_s , Sc_2 close to its tip; R_s in direct longitudinal alignment with R_{2+3} ; a supernumerary cross-vein in cell R_3 about its own length before the upturned tip of the latter vein; in the right wing of the holotype, a further

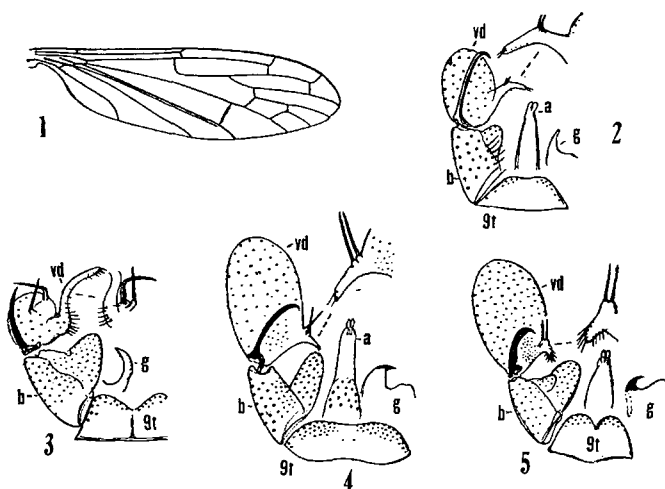


Fig. 1.—*Limonia* (*Neolimnobia*) *paprzyckii*, sp. n.; venation.
 Fig. 2.—*Limonia* (*Neolimnobia*) *paprzyckii*, sp. n.; male hypopygium.
 Fig. 3.—*Limonia* (*Geranomymia*) *contorta*, sp. n.; male hypopygium.
 Fig. 4.—*Limonia* (*Geranomymia*) *diargyria*, sp. n.; male hypopygium.
 Fig. 5.—*Limonia* (*Geranomymia*) *stoica*, sp. n.; male hypopygium.

Symbols: *a*, aedeagus; *b*, basistyle; *g*, gonapophysis; *t*, 9th tergite; *vd*, ventral dististyle.

adventitious cross-vein in cell R_4 beneath the supernumerary vein in cell R_3 ; *m-cu* some distance before the fork of M .

Abdomen yellow, the tergites with their posterior borders narrowly darkened, on the basal segments paler and restricted to the central portion of the segment, on

the outer segments darker and more extensive; sub-terminal segment and genital shield light yellow; sternites yellow. Ovipositor with cerci slender, upcurved. Male hypopygium (fig. 2) with the tergite, 9*t*, narrowed outwardly, the caudal margin truncate or virtually so. Basistyle, *b*, with the ventromesal lobe short and stout; mesal face of style cephalad of lobe with several strong black setæ. Dorsal dististyle a nearly straight rod that is about equal in length to the ventral dististyle, its tip decurved, acute and blackened. Ventral dististyle, *vd*, relatively small, oval, the rostral prolongation long, bent or arcuated at near mid-length and here on outer margin with two very short acute spines; apex of prolongation obtuse. Gonapophyses, *g*, with mesal-apical lobe pale, erect, gradually narrowed to the acute tip.

Hab. Peru (Junin).

Holotype, ♀, Satipo, Jauja, altitude 800–900 metres, May 31, 1940 (*Paprzycki*). *Allotopotype*, ♂, January 20, 1940.

I take great pleasure in naming this very distinct fly in honour of the collector, Mr. Pedro Paprzycki, who has collected numerous crane-flies in the vicinity of Satipo. In its general appearance it is most like species of the subgenus *Limonia* belonging to the *repanda* group, especially *Limonia (Limonia) contradistincta* Alexander (south-eastern Brazil). The details of pattern of the wings and legs, as well as the venation, are quite different from those of *contradistincta*. Because of the supernumerary cross-vein in cell *R*₃, the species must be referred to the subgenus *Neolimnobia*, where it is most similar to *L. (N.) ran slucida* Alexander (Panama).

Limonia (Geranomyia) callinota, sp. n.

General coloration of body yellow, the mesonotum handsomely patterned with dark brown, including a single broad median stripe on præscutum and mediotergite; rostrum relatively short; femora brown, the tips narrowly obscure yellow; wings pale greyish yellow, restrictedly patterned with brown, the markings chiefly marginal; cord and outer end of cell 1st *M*₂ only slightly seamed with darker; *Sc* short, *Sc*₁ ending about opposite

one-fourth the length of *Rs* ; abdominal tergites uniformly dark brown, unpatterned.

Female.—Length, excluding rostrum, about 6.5 mm.; wing 7.5 mm. ; rostrum about 2.6 mm.

Rostrum and maxillary palpi black, the short tips of the labial palpi paler. Antennæ black throughout ; flagellar segments oval ; terminal segment very long, approximately twice the penultimate, narrowed outwardly. Head light grey, the sides of the posterior vertex darker ; eyes large ; anterior vertex (female) reduced to a narrow strip that is slightly more than one-third the diameter of scape.

Pronotum very small, dark brown above, paler on sides. Mesonotum bright yellow, handsomely and conspicuously patterned with dark brown, including a single broad median stripe on præscutum that contrasts abruptly with the broad lateral ground borders ; median region of scutum testaceous yellow, the lobes dark brown ; scutellum and parascutella testaceous yellow ; mediotergite broadly dark brown on central portion, the narrow lateral borders and all of pleurotergite pale yellow. Pleura uniformly yellow. Halteres with stem brownish yellow, the base clearer yellow, knob brown. Legs with coxæ and trochanters pale yellow ; femora brown, the tips narrowly obscure yellow, with a vaguely darker subterminal ring ; tibiæ and tarsi light brown, the terminal tarsal segments black. Wings pale greyish yellow, rather restrictedly patterned with brown, the markings chiefly marginal ; larger brown areas at supernumerary cross-vein in cell *Sc* ; a common mark at fork of *Sc* and origin of *Rs* ; stigma ; smaller brown marginal clouds at ends of veins *R*₃, *Cu*₁, 1st *A* and 2nd *A*, the last two larger ; cord and outer end of cell 1st *M*₂ very slightly seamed with darker ; veins yellow, darker in the patterned areas. Venation : *Sc* relatively short, *Sc*₁ ending about opposite one-fourth the length of *Rs*, *Sc*₂ at its tip ; a supernumerary cross-vein in cell *Sc* ; *m-cu* close to fork of *M*.

Abdominal tergites dark brown, unpatterned ; sternites more yellowish brown ; genital segment obscure yellow. Ovipositor with cerci slender, only gently curved.

Hab. Peru (Junin).

Holotype, ♀, Carpapata, Tarma, altitude 2600 metres, May 15, 1940 (*Woytkowski*).

Limonia (Geranomyia) callinota is entirely different from the now very numerous species of the subgenus in Tropical America. In its wing-pattern it much resembles the otherwise very different *L. (G.) marthæ* Alexander, of Colombia and Venezuela.

Limonia (Geranomyia) contorta, sp. n. (Fig. 3.)

Belongs to *lachrymalis* group, close to *lachrymalis*; male hypopygium with two rostral spines, one arising from a long basal tubercle.

Male.—Length, excluding rostrum, about 6–7 mm.; wing 7–8.5 mm.; rostrum about 3–3.3 mm.

Female.—Length, excluding rostrum, about 6.5–7 mm.; wing 7–8 mm.; rostrum about 3–3.5 mm.

Rostrum black. Antennæ black; flagellar segments oval to long-oval. Head black.

Thorax uniformly blackened. Halteres black, the base of stem restrictedly yellow. Legs black, the posterior coxæ a trifle paler. Wings with a strong blackish tinge, the oval stigma a little darker; veins brown. Venation: *Sc* short, *Sc*₁ ending opposite or just beyond origin of *Rs*; cell 1st *M*₂ considerably longer than vein *M*₁₊₂ beyond it.

Abdomen black, more or less pruinose, the basal sternites a little brightened, especially in female. Male hypopygium (fig. 3) with the tergite, 9*t*, deeply notched medially. Remainder of hypopygium much as in *lachrymalis*, but with two rostral spines, one straight, the other crossing it at a right-angle, arising from a long basal tubercle.

Hab. Peru (Junin).

Holotype, ♂, Huacapistana, Tarma, altitude 3600–5400 feet, February 14, 1940 (*Woytkowski*). *Allototype*, ♀, Carpapata, altitude 2600 metres, May 6, 1940 (*Woytkowski*). *Paratopotypes*, 2 ♀♀, February 5–14, 1940; *paratypes*, 2 ♂♂, 1 ♀, with the allotype, May 1–10, 1940.

Limonia (Geranomyia) contorta is allied to *L. (G.) lachrymalis* Alexander (Mexico-Peru), differing especially in the details of structure of the male hypopygium, notably the two rostral spines. In *lachrymalis* there is a single rostral spine, arising from a relatively short tubercle.

Limonia (Geranomyia) diargyria, sp. n. (Fig. 4.)

Belongs to the *biargentata* group; mesonotal præscutum with disk light orange-yellow, bordered laterally by a narrow silvery line; median area of scutum and scutellum with a common central silver vitta; pleura obscure yellow; femora yellow, with a narrow black subterminal ring; wings brownish yellow, sparsely patterned with brown; male hypopygium with the ninth tergite only gently emarginate; ventral dististyle very large and fleshy, its area about equal to twice the total area of basistyle; gonapophyses with mesal apical blade broad, extending caudad of the lateral lobe of the apophysis.

Male.—Length, excluding rostrum, about 5.5 mm.; wing 7 mm.; rostrum about 4 mm.

Rostrum brownish black throughout, relatively long; maxillary palpi black. Antennæ with scape and pedicel dark brown, flagellum more brownish yellow; flagellar segments cylindrical, the longest verticils unilaterally arranged, more than one-half longer than the segment. Head with anterior vertex silvery; posterior vertex dull black, with a narrow median silvery line.

Mesonotal præscutum light orange-yellow, the sub-lateral portions on either side with a narrow silvery line, bordered internally by a faintly darkened line; lateral præscutal border narrowly darkened; scutal lobes obscure orange, the median area and scutellum pale brown with a narrow median silvery line running the length of both; mediotergite obscure brownish yellow. Pleura obscure yellow. Halteres with stem yellow, knob dark brown. Legs with the coxæ and trochanters pale yellow; femora yellow with a narrow but very conspicuous black subterminal ring, removed from the tip a distance about equal to three times its own width; tibiæ and tarsi brownish yellow to pale brown. Wings brownish yellow, the prearcular and costal fields clearer yellow; a very restricted brown pattern, including the stigma; three costal spots at the supernumerary cross-vein in cell *Sc*, origin of *Rs* and fork of *Sc*, respectively; cord and outer end of cell 1st *M*₂ very narrowly and insensibly seamed with brown; veins beyond cord pale brown, darker in

clouded portions; veins in basal parts of wing more yellow. Venation: Sc_1 ending just before mid-length of Rs , Sc_2 at its tip; $m-cu$ before the fork of M .

Abdomen brownish yellow to obscure yellow, the neisures weakly darkened; hypopygium obscure yellow. Male hypopygium (fig. 4) with the tergite, $9t$, transverse' the caudal margin very gently emarginate. Basistyle, b , with the ventromesal lobe relatively long but simple. Dorsal dististyle a gently curved rod, the decurved tip acute. Ventral dististyle, vd , unusually large for a member of the *biargentata* group, in area about twice the total extent of the basistyle; rostral prolongation slender, the spines slightly exceeding the prolongation in length, arising from short equal tubercles that are close together at their bases. Gonapophyses, g , with mesal apical lobe broad, extending much farther caudad than the lateral lobe of the apophysis, ending in an acute black spine.

Hab. Peru (Huanuco).

Holotype, ♂, Pumahuasi, altitude 980 metres, July 25, 1939 (*Woytkowski*).

Limonia (*Geranomyia*) *diargyria* is closest to *L. (G.) lemniscata* Alexander (Paraguay), which it resembles in general size and colour. It differs especially in the structure of the male hypopygium, notably the tergite, ventral dististyle and gonapophysis.

Limonia (*Geranomyia*) *transitoria*, sp. n.

Size large (wing, female, over 9 mm.); general coloration of præscutum light grey, with five dark stripes, the discal three black and very clearly defined, wider than the interspaces; rostrum long, exceeding one-half the length of wing; posterior sclerites of notum and the pleura dark brown; femora brown with a darker brown subterminal ring that is preceded and followed by clear yellow annuli; tibiæ brown; tarsi obscure yellow; wings with a weak brown tinge, very restrictedly patterned with darker; Sc and Rs long; abdominal tergites uniformly black.

Female.—Length, excluding rostrum, about 8 mm.; wing 9.5 mm.; rostrum about 5.5 mm.

Rostrum elongate, exceeding one-half the wing, black, the tips of the labial palpi slightly paler. Antennæ black; flagellar segments cylindrical, the verticils a little shorter than the segments. Head black, the sublateral and median areas of vertex light grey; anterior vertex reduced to a linear strip.

Pronotum broadly black medially and on sides, the dark areas divided by narrow yellowish grey lines. Mesonotal præscutum grey, with three very distinct black lines that are a little wider than the ground interspaces; lateral præscutal borders somewhat more broadly brownish black; scutum and scutellum brown, with a continuous narrow pale median vitta extending the length of both, narrowed to a point behind; mediotergite dark brown. Pleura almost uniformly dark brown, including the dorso-pleural membrane. Halteres with stem obscure yellow, knob brownish black. Legs with the coxæ brown, the fore pair somewhat darker; trochanters brownish yellow; femora brown, with a darker brown subterminal ring that is preceded and followed by clear yellow rings, the apical one narrower than the subterminal; tibiæ brown; tarsi paling to yellow. Wings with a weak brownish tinge, very restrictedly patterned with darker, including small areas at origin of *Rs*, stigma, cord and outer end of cell 1st M_2 ; supernumerary cross-vein in cell *Sc* and tip of vein *Sc* scarcely darkened; veins brown. Venation: *Sc* long, Sc_1 ending shortly before fork of the long *Rs*, Sc_2 a little removed from its tip; a supernumerary cross-vein in cell *Sc*; *Rs* about four times the length of the basal section of R_{4+5} ; cell 1st M_2 long, subequal to vein M_{1+2} beyond it; *m-cu* close to fork of *M*.

Abdominal tergites uniformly black, sternites dark brown; subterminal segments paler; cerci long and straight.

Hab. Peru (Junin).

Holotype, ♀, Huacapistana, Tarma, altitude 3600–5400 feet, March 1, 1940 (*Woytkowski*).

Superficially the present fly resembles dark-coloured species of the subgenus such as *Limonia* (*Geranomyia*) *cerberus* (Alexander) and *L. (G.) lachrymalis* (Alexander), but the præscutal pattern, elongate rostrum, very long

vein *Sc*, and other characters indicate that it is very distinct.

Limonia (Geranomyia) subgaudens, sp. n.

Size large (wing, female, 10 mm. or more); rostrum elongate, approximately one-half the length of body; general coloration grey, the præscutum with three narrow black stripes; scutellum broad, pale brown; halteres with stem yellow, knob brownish black; femora brown, the tips broadly yellow, enclosing a broad, dark brown, subterminal ring; wings whitened, conspicuously patterned with brown; stigma buffy brown with both its inner and outer ends darkened; *Sc* long, the dark area at its tip disconnected from the area at origin of *Rs*; cell 1st M_2 a little longer than vein M_{1+2} beyond it.

Female.—Length, excluding rostrum, about 8.5–10 mm.; wing 10–11.5 mm.; rostrum about 4–5 mm.

Rostrum black throughout, relatively long, as shown by the measurements, being approximately one-half the length of the body. Antennæ black; basal flagellar segments short-oval to subcylindrical, the outer segments more elongate. Head with the anterior vertex silvery, the colour produced backward over the posterior vertex to the occiput, the remainder of vertex black.

Pronotum grey. Mesonotal præscutum grey, with three narrow but conspicuous black stripes, the median one narrowed posteriorly but reaching the suture; sublateral stripes approximately equal in width for their entire extent, crossing the suture on to the mesal portion of each scutal lobe; extreme lateral borders of præscutum not or scarcely darkened; median area of scutum and the broad scutellum pale brown, the latter with vague indications of two darker submedian stripes; postnotum black, sparsely pruinose. Pleura grey, sparsely variegated with slightly more darkened areas. Halteres with stem yellow, knob brownish black. Legs with coxæ more or less infuscated, paler apically; trochanters obscure yellow; femora brown, their bases restrictedly yellow, the tips broadly yellow, enclosing a broad, dark brown, subterminal ring; tibiæ and tarsi brownish yellow, the terminal tarsal segments blackened. Wings with the

ground-colour whitened, the costal region a little more yellowish; a rather restricted but conspicuous dark brown pattern, arranged as follows:—Seams at arculus, supernumerary cross-vein in cell *Sc*, origin of *Rs*, fork of *Sc*, cord, outer end of cell 1st M_2 and as conspicuous clouds before mid-length of cell R_3 , near outer end of cell R_5 and on distal fourth of vein M and along M_{3+4} ; conspicuous seams on distal third of vein 1st *A* and outer half of vein 2nd *A*, the latter especially conspicuous; more or less distinct seams at tip of vein R_3 and along distal section of vein M_3 ; a small rounded dark cloud at axillary border of cell 2nd *A*; stigma with centre pale buffy brown, each end bordered by darker brown; veins yellow, darker in the patterned areas. Venation: *Sc* long, ending near two-thirds the length of *Rs*, Sc_2 near its tip; a supernumerary cross-vein in cell *Sc*; cell 1st M_2 a little longer than vein M_{1+2} beyond it; *m-cu* at or just before the fork of M .

Abdomen dark brown to brownish black, sparsely grey pruinose, the posterior borders of the sternites in certain cases restrictedly pale; genital segment (female) reddish brown.

Hab. Peru (Junin).

Holotype, ♀, Huasahuasi, Tarma, altitude 2800 metres, April 24, 1940 (Woytkowski). *Paratopotype*, 1 ♀, April 23, 1940.

Limonia (Geranomyia) subgaudens is closest to *L. (G.) gaudens* Alexander and *L. (G.) laudanda* Alexander. It differs from the latter especially in the long *Sc*, with the darkened areas at fork of *Sc* and at origin of *Rs* disconnected. From *gaudens* it differs conspicuously in the venation and in all details of wing-pattern.

Limonia (Geranomyia) stoica, sp. n. (Fig. 5.)

Size large (wing 9 mm. or more); general coloration grey, the præscutum with three narrow blackish stripes; halteres pale yellow; femora brown, the tips darker; tibiæ and tarsi brownish black to black; wings brownish yellow, with a restricted dark pattern; *Sc* long, Sc_1 ending opposite or just beyond mid-length of *Rs*; cell

1st M_2 longer than the veins beyond it ; male hypopygium with the tergite deeply notched medially ; ventral dististyle large and fleshy, its rostral prolongation small ; rostral spines two, straight, arising from a common sclerotized low flange or tubercle ; gonapophyses with mesal apical lobe short and curved, blackened.

Male.—Length, excluding rostrum, about 7.5–8 mm. ; wing 9–10.5 mm. ; rostrum about 2.7–3 mm.

Female.—Length, excluding rostrum, about 8–8.5 mm. ; wing 10–10.5 mm. ; rostrum 3–3.3 mm.

Rostrum black throughout, relatively short, being only a little more than one-third the length of body. Antennæ black throughout ; flagellar segments cylindrical, the terminal segment subequal in length to the penultimate ; verticils short. Head in both sexes with the anterior vertex narrower than the diameter of scape, silvery, this colour continued back across the posterior vertex to the occiput, bordered on either side by blackish, the remainder of head grey.

Pronotum dark grey. Mesonotal præscutum grey, with three narrow blackish stripes, the median one more intense, narrowed behind and not reaching the suture, the laterals narrowed in front ; lateral præscutal borders not blackened ; posterior sclerites of notum grey, the scutellum a little more brownish, sparsely pruinose ; scutal lobes slightly darkened on cephalic and mesal borders. Pleura brownish grey, the ventral sternopleurite and ventral pleurotergite narrowly blackened ; a black line across ventral anepisternum ; dorsopleural membrane obscure yellow. Halteres pale yellow. Legs with coxæ reddish brown, the surface sparsely pruinose, the tips paler ; trochanters obscure yellow ; femora brown, the tips darker, the bases vaguely brightened ; tibiæ and tarsi passing through brownish black to black. Wings with the ground-colour brownish yellow, sparsely patterned with darker, including small areas at the supernumerary cross-vein in cell Sc , origin of Rs , fork of Sc , cord and outer end of cell 1st M_2 ; stigma oval, relatively small, brown. Venation : Sc long, Sc_1 ending opposite one-half to three-fifths the length of Rs , Sc_2 near its tip ; cell 1st M_2 longer than the veins beyond it.

Abdominal tergites dark brown, sparsely pruinose, the lateral borders narrowly paler; basal sternites obscure yellow, the outer segments black, sparsely pruinose, the posterior borders narrowly pale; hypopygium dark. Male hypopygium (fig. 5) with the tergite deeply notched medially, the lateral lobes conspicuous, rounded. Basistyle, *b*, relatively small, the ventro-mesal lobe of moderate size, with an accessory lobule or protuberance on caudal margin near base. Dorsal dististyle relatively small, the tip acute. Ventral dististyle, *vd*, large, its total area exceeding twice that of basistyle; rostral prolongation small, the two rostral spines from a common basal tubercle or flange, the spines straight and relatively short. Gonapophyses, *g*, with mesal apical lobe short and curved, the blackened tips acute, the concave margin smooth or more or less serrulate. Ædeagus narrowed to apex.

Hab. Peru (Junin).

Holotype, ♂, Carpapata, Tarma, altitude 2600 metres, May 8, 1940 (*Woytkowski*). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, 10 ♂♂, May 3–23, 1940; *paratypes*, 1 ♂, 1 ♀, Huacapistana, altitude 3600–5400 feet, February 11, 1940 (*Woytkowski*).

Limonia (*Geranomyia*) *stoica* differs from the other regional species that have three narrow dark præscutal stripes and long vein *Sc* in its large size, almost unvariegated legs, pale halteres, sparsely patterned wings, and in the structure of the male hypopygium. In its general appearance and structure of the hypopygium it most resembles *L. (G.) serotina* Alexander and *L. (G.) subserotina* Alexander, of Argentina, yet is quite distinct.

Limonia (*Geranomyia*) *provocator*, sp. n. (Fig. 6.)

Mesonotal præscutum light grey, the disk with three narrow black stripes that are subequal in extent to the interspaces; scutellum and broad median area of scutum yellow; posterior sclerites of notum and the pleura black; legs black, the tips of femora very narrowly pale; wings broad, weakly tinged with brown, sparsely patterned with pale brown, including a common area at fork of *Sc* and

origin of *Rs*; stigma darkened; *Sc*₁ ending opposite origin of *Rs*; abdominal tergites brownish black, sternites a little paler; male hypopygium with the caudal margin of tergite emarginate medially; ventral dististyle large, rostral spines two, separate, unequal, placed at base of prolongation; gonapophyses with mesal apical lobe

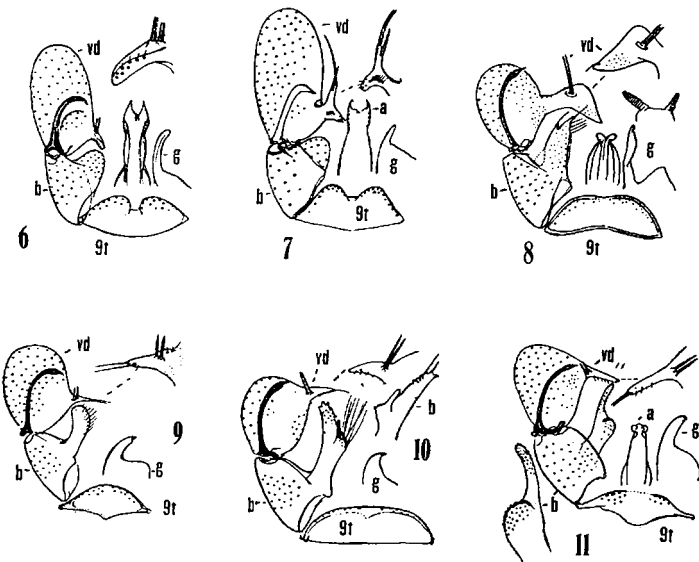


Fig. 6.—*Limonia (Geranomyia) provocator*, sp. n.; male hypopygium.
 Fig. 7.—*Limonia (Geranomyia) conquisita*, sp. n.; male hypopygium.
 Fig. 8.—*Limonia (Rhipidia) invaripennis*, sp. n.; male hypopygium.
 Fig. 9.—*Limonia (Rhipidia) profana*, sp. n.; male hypopygium.
 Fig. 10.—*Limonia (Rhipidia) succentiva*, sp. n.; male hypopygium.
 Fig. 11.—*Limonia (Rhipidia) vafra*, sp. n.; male hypopygium.

Symbols: *a*, aedeagus; *b*, basistyle; *g*, gonapophysis; *t*, 9th tergite; *vd*, ventral dististyle.

slender, pale; aedeagus terminating in two pale triangular lobes.

Male.—Length, excluding rostrum, about 6 mm.; wing 8.8–9 mm.; rostrum about 4 mm.

Rostrum a little less than one-half the length of wing, black, the labial palpi paler at tips. Antennæ black throughout; flagellar segments subcylindrical, crowded. Head grey, the central area lighter ashy grey, on posterior vertex with a blackened area on either side of this mid-line; anterior vertex narrower than the diameter of scape.

Pronotum grey, narrowly blackened medially above. Mesonotal præscutum light grey, the disk with three narrow black stripes that are subequal in extent to the interspaces; lateral præscutal margins scarcely darkened, in cases paling to buffy; humeral region restrictedly pale; the broad median area of scutum, with the scutellum and parascutella, yellow, the centres of scutal lobes black; mediotergite brownish black. Pleura dark, sparsely pruinose, the dorsopleural region light yellow; meral region paler. Halteres with stem pale, knob darkened. Legs with coxæ yellow, the fore and middle pair darker except at tips; trochanters testaceous yellow; femora black, the bases obscure yellow, the tips very narrowly and insensibly paler, in cases more abruptly and conspicuously so; tibiæ and tarsi black. Wings broad; ground-colour weakly brown with a very restricted pale brown pattern, including seams at the supernumerary cross-vein in cell *Sc*; fork of *Sc* and origin of *Rs*; stigma; cord and outer end of cell 1st *M*₂ not darkened; veins pale brown. Venation: *Sc* very short, *Sc*₁ ending opposite to just beyond origin of *Rs*, *Sc*₂ at its tip; *m-cu* close to fork of *M*.

Abdominal tergites brownish black; sternites brownish yellow; hypopygium dark. Male hypopygium (fig. 6) with the median region of tergite deeply emarginate. Basistyle, *b*, with the ventromesal lobe rather large, simple. Ventral dististyle, *vd*, large and fleshy, more than twice as extensive as the basistyle; rostral prolongation with two unequal spines near base, these arising from short individual tubercles; spines placed close together, the outermost one a little longer. Dorsal dististyle strongly curved, the decurved tip acute. Gonapophyses, *g*, with mesal apical lobes slender, pale. Ædeagus, *a*, terminating in two lobes that are extended caudad into pale triangular points.

Hab. Peru (Junin).

Holotype, ♂, Huasahuasi, Tarma, altitude 2800 metres, April 7, 1940 (*Woytkowski*). *Paratopotype*, ♂, April 19, 1940.

Limonia (Geranomyia) provocator is well distinguished from other species having tristriate mesonotal præcuta by the blackened femora with pale tips, the very restricted dark wing pattern, short *Sc*, and in the details of structure of the male hypopygium. It is most similar to *L. (G.) inæquispinosa* Alexander (Ecuador), yet amply distinct.

Limonia (Geranomyia) conquistata, sp. n. (Fig. 7.)

Size small (wing, male, less than 4.5 mm.); general coloration buffy grey, the præcutum with three conspicuous black stripes, additional to the darkened lateral borders; legs brown to brownish black, the femoral tips narrowly and vaguely paler; wings faintly tinged with brown, the oval stigma darker brown; no other distinct dark marks except a vague cloud at fork of *Sc*; vein *Sc* short; male hypopygium with the rostral prolongation of the ventral dististyle small, bearing a long conspicuous tubercle that is provided with two unequal spines, the terminal one longer, the smaller spine shortly removed from the summit of tubercle.

Male.—Length, excluding rostrum, about 4 mm.; wing 4.3 mm.; rostrum about 2 mm.

Rostrum about one-half as long as the body, brownish black. Antennæ black throughout; flagellar segments oval. Head grey, with a narrow pale median line, this latter on posterior vertex bordered by extensive blackened areas.

Pronotum buffy grey, narrowly darkened medially. Mesonotal præcutum buffy grey, with three conspicuous black stripes in addition to the darkened lateral borders, the stripes wider than the interspaces; scutal lobes dark brown, the median area paler; scutellum brown, the posterior portion paler; mediotergite brown. Pleura brownish testaceous, paler ventrally. Halteres pale, the knobs dark brown. Legs with the coxæ and trochanters testaceous yellow; femora brown, the tips very narrowly and vaguely paler; tibiæ and tarsi brownish black. Wings faintly tinged with brown, the oval stigma darker

brown; a scarcely indicated brown cloud at fork of *Sc* and origin of *Rs*; veins pale brown. Venation: *Sc* short, *Sc*₁ ending just beyond origin of *Rs*, *Sc*₂ at its tip; a supernumerary cross-vein at near mid-length of cell *Sc*; *R*₂ shorter than the free tip of *Sc*₂; basal section of *R*₄₊₅ oblique, about one-half longer than *r-m*; *m-cu* before fork of *M*; cell 2nd *A* relatively wide.

Abdomen, including hypopygium, dark brown; basal sternites yellow. Male hypopygium (fig. 7) with the caudal border of tergite, 9t, conspicuously emarginate. Ventral dististyle, *vd*, much larger than the basistyle, the rostral prolongation short, with a conspicuous cylindrical tubercle near its base; rostral spines very unequal in size, both arising at or near the summit of the tubercle; terminal spine longest, gently curved, about twice the length of tubercle; second spine slightly subterminal in position, straight, a little shorter than the tubercle but longer than the apical portion of the prolongation.

Hab. Peru (Junin).

Holotype, ♂, Huacapistana, Tarma, altitude 3600-5400 feet, February 5, 1940 (*Woytkowski*).

From the other regional members of the subgenus having the disk of the præscutum conspicuously trivittate with dark brown or black, the present fly is well-distinguished by the small size, unpatterned legs, very restricted wing-pattern, short *Sc*, and by the quite distinct male hypopygium, notably the ventral dististyle and its rostral prolongation. Among other species the fly is most similar of *Limonia* (*Geranomyia*) *fluxa* Alexander, yet differs in all details of structure of the male hypopygium.

Limonia (*Geranomyia*) *æquabilis deplexa*, subsp. n.

Differs from the typical form, *æquabilis* Alexander, of northern Argentina, chiefly in the details of structure of the male hypopygium, notably the rostral prolongation of the ventral dististyle and its spines. These spines are so closely approximated or fused as to appear like a single long spine directed mesad or cephalad; the common basal tubercle, while very large and tumid, is smaller than in the typical form and is apically produced

into a more slender neck-like portion that is well elevated above the body of the lobe. The typical form has this basal tubercle exceedingly large and tumid, with virtually its whole length appressed to the prolongation, the neck portion short and only slightly elevated.

Hab. Peru (Junin).

Holotype, ♂, Huacapistana, Tarma, altitude 3600–5400 feet, February 14, 1940 (*Woytkowski*). *Allotype*, ♀, pinned with type. *Paratopotypes*, 6 ♂♂, February 4–March 1, 1940; *paratype*, 1 ♂, Carpapata, Tarma, altitude 2600 metres, May 4, 1940 (*Woytkowski*).

Limonia (Rhipidia) nobilissima, sp. n.

Size very large (wing, female, over 12 mm.); general coloration grey; thoracic pleura with a broad, brownish black, longitudinal stripe; knobs of halteres infuscated; femora brownish yellow, with a narrow, virtually terminal, dark brown ring; wings whitish subhyaline, spotted and dotted with brown; *Sc* long, *Sc*₁ ending opposite or beyond three-fourths the length of the long *Rs*; *m-cu* before fork of *M*; abdominal sternites brownish black, their central portion extensively obscure yellow.

Female.—Length about 10 mm.; wing 12.5 mm.

Rostrum black, sparsely pruinose, about one-third the remainder of head; palpi black. Antennæ black throughout; flagellar segments (female) moderately produced, the abrupt apical pedicles yellow; terminal segment about one-third longer than the penultimate. Head light grey, the anterior vertex more infuscated; anterior vertex about equal in width to the diameter of scape.

Pronotum dark brown. Mesonotal præscutum with disk reddish brown, patterned with darker brown, the usual stripes more or less confluent, the median one ending as a still darker area some distance before suture; lateral borders of præscutum more greyish; posterior sclerites of notum chiefly pale grey, the scutal lobes with darkened centres; mediotergite with a scarcely indicated darkened median vitta. Pleura grey, with a broad and conspicuous longitudinal brownish-black stripe extending from the pronotum across the dorsal pleurites and dorso-pleural membrane to just before the root of the halteres

on the pleurotergite; sternopleurite not darkened. Halteres yellow, the knobs infuscated. Legs with the coxæ greyish yellow pollinose; trochanters obscure yellow; femora brownish yellow with a narrow, virtually terminal, dark brown ring; tibiæ obscure yellow, the tips even more narrowly blackened; tarsi obscure yellow, the terminal two segments black. Wings whitish subhyaline, with an abundant spotted and dotted brown pattern; the larger brown spots are distributed as follows: before mid-length of cell *C*; origin and fork of *Rs*; *Sc*₁ and *Sc*₂; still smaller spots at *R*₂ and the free tip of *Sc*₂, *m-cu*, and at ends of all longitudinal veins; darkened dots in virtually all cells, those of the cephalic third more free; stigmal area scarcely evident, yellow, its outer end delimited by the brown spots at *R*₂ and the free tip of *Sc*₂; veins yellow, darker in the clouded areas. Venation: *Sc* long, *Sc*₁ ending about opposite three-fourths to four-fifths the length of the long *Rs*, *Sc*₂ some distance from its tip, at near mid-distance to the origin of *Rs*; *m-cu* approximately one-half its length before the fork of *M*; cell 1st *M*₂ about as long as vein *M*₁₊₂ beyond it.

Abdominal tergites brown, sparsely pruinose; sternites brownish black, the central portions extensively obscure yellow; terminal segments, including genital shield, obscure orange. Ovipositor with valves horn-colour; cerci slender and slightly upcurved.

Hab. Peru (Junin).

Holotype, ♀, Huasahuasi, Tarma, altitude 2800 metres, April 7, 1940 (*Woytkowski*).

Limonia (Rhipidia) nobilissima is the largest species of the subgenus so far described. It is entirely distinct from the only other very large regional species, *L. (R.) stonei* Alexander, of Colombia, differing in all details of coloration of the body and wings.

Limonia (Rhipidia) myriosticta, sp. n.

General coloration brownish grey, the mesonotum patterned with brown; antennæ usually long-bipectinate for the female sex, with flagellar segments three to nine, inclusive, each bearing two branches that exceed the segments in length; femora pale brownish yellow, the

narrow tips clearer yellow ; tibiæ and tarsi light yellow ; wings pale yellow with a heavy and abundant spotted and dotted brown pattern, the dots unusually numerous ; *Sc* long ; *m-cu* at or shortly beyond the fork of *M* ; abdominal tergites light brown, bordered laterally and caudally with darker brown.

Female.—Length about 6.5–6.7 mm. ; wing 7–7.4 mm.

Rostrum and palpi black. Antennæ unusually long-bipectinate for the female sex ; scape, pedicel, basal enlargements and branches of flagellar segments, and the entire terminal segment dark brown ; pedicels of flagellar segments and all of segments twelve and thirteen white ; flagellar segments one and two simply unipectinate, the latter with a longer branch ; flagellar segments three to nine, inclusive, with long branches that exceed the segments in length ; flagellar segments ten and eleven each with a short simple projection, the latter shortest ; terminal segment nearly one-half longer than the penultimate, narrowed outwardly. Head dark grey, the anterior vertex reduced to a linear strip.

Pronotum dark brown. Mesonotum brownish grey, the præscutum patterned with brown, appearing as three capillary central vittæ on anterior half, on the posterior half widely expanded to involve most of the disk ; scutal lobes with darkened centres ; scutellum and mediotergite greyish pruinose with a capillary dark brown median vitta. Pleura chiefly greyish brown, the ventral sternopleurite whitened, bordered above by a slightly darker brown longitudinal line, with a second somewhat similar line across the ventral anepisternum. Halteres brownish yellow. Legs with the *coxæ* darkened basally, their tips pale ; trochanters yellow ; femora pale brownish yellow, the narrow tips clearer yellow ; tibiæ and tarsi light yellow, only the terminal tarsal segments dark brown. Wings with the ground-colour pale yellow, the prearcular field somewhat more intensely so ; a very heavy brown spotted and dotted pattern, including major darker brown spots in bases of cells *R* and *M*, at supernumerary cross-vein in cell *Sc*, origin of *Rs*, along cord and outer end of cell 1st *M*₂, *R*₂ and adjoining portions of the radial veins behind it ; all cells of wing abundantly dotted with paler brown specks ; veins yellow, brownish

black in the major patterned areas. Venation: *Sc* long, *Sc*₁ ending near two-thirds to three-fourths the length of *Rs*, *Sc*₂ near its tip; a supernumerary cross-vein in cell *Sc* at near mid-distance between arculus and origin of *Rs*; *Rs* long, angulated at origin; cell 1st *M*₂ longer than vein *M*₁₊₂ beyond it; *m-cu* at or shortly beyond the fork of *M*.

Abdominal tergites light brown, the lateral, and especially the posterior borders of the segments, margined with darker brown; sternites obscure brownish yellow, with the posterior borders darker brown; genital segment brownish yellow; cerci slender, strongly upcurved, horn-yellow.

Hab. Peru (Junin); Ecuador (Oriente).

Holotype, ♀, Satipo, Jauja, Peru, altitude 800–900 metres, July 16, 1940 (*Paprzycki*). *Paratype*, ♀, Abitagua, Ecuador, altitude 1800 metres, April 15, 1940 (*MacIntyre*).

Limonia (Rhipidia) myriosticta has the abundantly dotted wing-pattern much as in *L. (R.) cramptoni* Alexander, of north-eastern Brazil, and *L. (R.) microsticta* Alexander, of northern Argentina and south-eastern Brazil, but in all other respects is a very different fly. The unusual development of the flagellar branches in the female sex is noteworthy.

Limonia (Rhipidia) invaripennis, sp. n. (Fig. 8.)

Size large (wing, male, 9 mm. or more); general coloration buffy to grey, the præscutum with a dark median stripe; antennæ of male elongate, with ten segments bearing two very long branches, in addition to a small basal stub or spur; wings with dark pattern very reduced; male hypopygium with the rostral prolongation a conspicuous flattened blade, the rostral spines arising close together from near mid-length on the face of the blade; mesal apical lobe of gonapophysis elongate, constricted at near mid-length.

Male.—Length about 9.5–10 mm.; wing 8–10.5 mm.; antenna about 4–4.2 mm.

Female.—Length about 8.5–9 mm.; wing 9–10 mm.; antenna about 2 mm.

Rostrum and palpi black. Antennæ of male elongate, as shown by the measurements, with ten unequally tripectinate segments, the shortest branch a mere basal spur; first flagellar segment with a single long branch that is subequal in length to the pedicel of the segment; flagellar segments two to eleven, inclusive, tripectinate, as mentioned, the longest branches about three times the segments, the short spur less than the basal enlargement; terminal segment elongate, about one-half longer than the penultimate; antennæ and branches black, the pedicels whitened; antennæ of female short, simply serrate, the flagellar segments with a slight basal projection that is shorter than the apical pedicel; terminal segment nearly twice the penultimate. Head dark brownish grey; anterior vertex narrow, in male reduced to a linear strip that is about equal to the width of a single ommatidium, in female slightly wider.

Pronotum brownish grey, the posterior portion more buffy. Mesonotal præscutum ranging from buffy to grey, with a conspicuous dark brown central stripe that is wider in front; in some specimens this stripe paler and interrupted by dark lines; lateral stripes lacking; posterior sclerites of notum dark brownish grey, the scutellum paler. Pleura brownish grey, narrowly striped longitudinally with blackened lines, the more dorsal one longer. Halteres brownish black, the base of stem yellow; in cases, stem entirely yellow, knob dark brown. Legs with the coxæ yellow, more or less darkened basally, especially the fore pair; trochanters yellow; fore femora dark brown, the bases yellow; middle and posterior femora obscure yellow or brownish yellow with the tips more narrowly darkened; tibiæ and tarsi dark brown. Wings with a greyish tinge, the dark pattern much reduced, the stigma most evident, appearing as a slightly darkened ring with the centre pale; cells *C* and *Sc* a trifle darker than the ground; cord and outer end of cell 1st *M*₂ narrowly seamed with darker, more evident in female; veins brown. Venation: *Sc* long, *Sc*₁ ending about opposite two-thirds the length of *Rs*, *Sc*₂ at its tip; *m-cu* close to fork of *M*.

Abdomen of male somewhat elongate; tergites brown, the caudal borders narrowly darker brown to brownish

black; sternites more obscure yellow, the incisures narrowly darkened; outer segments and hypopygium brownish black. Male hypopygium (fig. 8) with the tergite, 9t, transverse, narrowed apically, the posterior border gently emarginate. Basistyle, *b*, with the ventromesal lobe relatively stout, bifid, the smaller arm or tubercle bearing a strong seta, the major lobe with a row of five or six similar tubercles with long setæ. Dorsal dististyle slender, the tip acute. Ventral dististyle, *vd*, dark coloured, relatively small, with a very large and conspicuous rostral prolongation, shaped as a yellow flattened blade, the tip acute; rostral spines placed close together at base of prolongation, lying in a shallow depression at near mid-length of blade. Gonapophyses, *g*, with mesal-apical lobe elongate, constricted at near mid-length. Anal tube terminating in two fleshy lobes or papillæ.

Hab. Peru (Junin).

Holotype, ♂, Huasahuasi, Tarma, altitude 2800 metres, April 15, 1940 (*Woytkowski*). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, 10 ♂♀, April 15–25, 1940.

In the unequally tripectinate flagellar segments of the male sex, the present fly agrees most nearly with *Limonia* (*Rhipidia*) *inæquipectinata* Alexander, of northern Argentina, and *L. (R.) tripectinata* Alexander, of Colombia, differing from both in the large size, almost unpatterned wings, and especially in the somewhat remarkable male hypopygium.

Limonia (*Rhipidia*) *invaripennis carpapata*, subsp. n.

Male.—Length about 7.5 mm.; wing 8 mm.; antenna about 3.8 mm.

Characters as in the typical form, differing especially in the smaller size, more heavily patterned wings, and especially in the structure of the male hypopygium.

Wings with darkened clouds at origin of *Rs*, fork of *Sc*, along cord and outer end of cell 1st *M*₂, and as heavy central washes in the outer radial and medial cells; stigma with central area pale, as in the typical form. Male hypopygium of the same general type as the typical

form, but with all structures slightly modified. Ventromesal lobe of basistyle very narrow, only about one-half as thick as in typical *invaripennis*, gradually narrowed to the simple pointed apex. Rostral prolongation even more flattened, the outer portion forming an even stronger angle, the total length of blade longer. Gonapophyses with mesal-apical lobes darkened and very narrow. Apical lobes of anal tube much stouter, strongly darkened.

Hab. Peru (Junin).

Holotype, ♂, Carpapata, Tarma, altitude 2600 metres, May 3, 1940 (*Woytkowski*).

Limonia (Rhipidia) profana, sp. n. (Fig. 9.)

Antennæ (male) with ten bipectinate flagellar segments; general coloration of mesonotum obscure brownish yellow, the præscutum with four darker brown stripes; scutellum and mediotergite dark; pleura pale greyish brown, striped longitudinally with black; halteres dusky; femora brown, paler basally, all tarsi dark; wings with a heavy brown pattern, including five major costal areas; Sc_1 ending at near two-thirds the length of *Rs*; abdominal tergites dark brown, sternites bicoloured, yellow with conspicuously darkened posterior borders; male hypopygium with the lobe of basistyle a simple blackened club, expanded distally.

Male.—Length about 9 mm.; wing 10 mm.; antenna about 2.6–2.9 mm.

Female.—Length about 7 mm.; wing 8 mm.

Rostrum and palpi black. Antennæ black, including the basal four segments and all branches; apical pedicels of remaining branched segments white; in male, flagellar segments two to eleven, inclusive, each with two long branches, the longest nearly three times the segments; first flagellar segment with a single stout spur; penultimate segment with branches slightly exceeding the segments; terminal segment simple, longer than the penultimate; in female, all flagellar segments excepting the last with a single strong spur that is shorter than the segment itself. Head dark grey; eyes of male contiguous on vertex.

Mesoonotal præscutum with the ground-colour obscure brownish yellow, with four darker brown stripes, the intermediate pair only narrowly separated medially; lateral stripes incurved at their anterior ends, isolating the posterior interspaces from the remainder of ground; scutum dark brown, the anterior portion of median area restrictedly paler; scutellum dark brown, in cases with a scarcely indicated median pale line; mediotergite brownish black. Pleura pale greyish brown, striped longitudinally with black, the dorsal stripe broader and more conspicuous, extending from the cervical region to the base of abdomen; ventral stripe poorly differentiated, occupying the sternopleurite. Halteres dusky, the extreme base of stem yellow. Legs with coxæ and trochanters yellow, the fore coxæ dark brown on more than the basal half; femora obscure yellow basally, passing into brown, the tip not abruptly blackened; tibiæ and tarsi brownish black. Wings with the ground-colour cream-yellow, chiefly restricted to the interspaces of the cephalic and outer portions, including both sides of the cord; a conspicuous brown pattern, including five major markings along anterior border, these more extensive than the interspaces, the last at stigma; cord and outer end of cell 1st M_2 similarly seamed with darker; posterior cells of wing almost uniformly suffused with a slightly paler shade of brown; veins brown, yellow in the interspaces of the costal field. Venation: Sc long, Sc_1 ending at near two-thirds the length of Rs , Sc_2 at its tip; cell 1st M_2 shorter than vein M_{1+2} beyond it; $m-cu$ close to fork of M .

Abdominal tergites dark brown; basal sternites light yellow, the posterior borders conspicuously dark brown, the extreme bases of the succeeding segments narrowly darkened. Male hypopygium (fig. 9) with the tergite small, the caudal border convexly rounded. Basistyle, b , with a dark-coloured ventromesal lobe that is shaped as a simple club expanded at outer end and here provided with long delicate setæ from very small inconspicuous punctures. Dorsal dististyle long and slender, the tip acute. Ventral dististyle, vd , large and fleshy, dark coloured, its area more extensive than that of basistyle;

rostral prolongation small and slender, tipped with two long setæ that exceed the prolongation in length; rostral spines relatively short, placed close together at near mid-length of prolongation, arising from small basal tubercles. Gonapophyses, *g*, with mesal-apical lobes narrowly blackened and pointed at tips.

Hab. Peru (Junin).

Holotype, ♂, Huasahuasi, Tarma, altitude 2800 metres, April 23, 1940 (*Woytkowski*). *Allotopotype*, ♀, with the type. *Paratopotypes*, 1 ♂, 1 ♀, April 12–20, 1940.

Limonia (Rhipidia) profana is closest to *L. (R.) succentiva*, sp. n., differing especially in the structure of the male hypopygium, as the simple darkened lobe of the basistyle.

Limonia (Rhipidia) succentiva, sp. n. (Fig. 10.)

General coloration brown, the præscutum with three darker stripes; antennæ of male with ten flagellar segments that bear two long branches, these about three times as long as the segments; femora brownish yellow, the tips narrowly and abruptly blackened; wings cream-yellow, with five conspicuous brown costal areas; cord and outer end of cell 1st M_2 seamed with brown; male hypopygium with the ventromesal lobe irregular in outline, expanded outwardly, at near mid-length bearing a conspicuous finger-like lobe.

Male.—Length about 7.5–8 mm.; wing 9–9.5 mm.; antenna about 3.5 mm.

Female.—Length about 7.5–8 mm.; wing 8.5–10 mm.

Rostrum and palpi black. Antennæ black, the apical pedicels of the flagellar segments white; flagellar segments (male) two to eleven, inclusive, each with two long conspicuous branches, the longest about three times the length of the segment; first flagellar segment with a simple short spur only; penultimate segment with the branches unequal in length, the longest subequal to the segment; terminal segment about as long as the penultimate; in female, flagellar branches simple, a little shorter than the segments. Head dark grey; eyes (male) large, almost contiguous above, the vertex greatly reduced; in female, the vertex only a trifle wider.

Mesonotal præscutum chiefly covered by three brown stripes, the buffy to greyish interspaces indicated behind, the anterior and lateral portions of the sclerite still darker brown; scutal lobes brown, the median area and central portion of scutellum pale; remainder of scutellum and the mediotergite dark. Pleura brown, with a conspicuous black longitudinal stripe across the dorsal sclerites, extending to base of abdomen; ventral sternopleurite less distinctly darkened. Halteres dusky, the base of stem yellow. Legs with coxæ obscure yellow, the bases of the fore and middle pair more infuscated; trochanters obscure yellow; femora obscure yellow to brownish yellow, the tips very narrowly but abruptly blackened, the amount subequal on all legs; tibiæ and tarsi dark brown to black. Wings with the ground-colour cream-yellow, with five conspicuous brown areas, the posterior portion of wing paler brown; fifth dark area at stigma; all dark costal areas well-separated, the second sometimes reduced or even virtually lacking; third and fourth areas, at origin of *Rs* and fork of *Sc*, well separated; distinct brown seams on cord and outer end of cell 1st M_2 ; veins brown, yellow in the costal interspaces. Venation: *Sc* long, Sc_1 ending near three-fourths the length of *Rs*, Sc_2 at its tip; cell 1st M_2 shorter than vein M_{1+2} beyond it; *m-cu* close to fork of *M*.

Basal abdominal tergites weakly bicoloured, the bases obscure brownish yellow, the broad apices black; outer tergites more uniformly blackened; sternites more evidently bicoloured, the yellow bases less obscured; hypopygium black. Male hypopygium (fig. 10) with the tergite, 9*t*, narrow, transverse, the caudal margin subtruncate to very gently convex. Basistyle, *b*, with the ventromesal lobe long and conspicuous, dark coloured, at near mid-length bearing a slender finger-like lobe, around base of latter with several strong setæ; apex of lobe produced into three tubercles that bear strong spinous setæ. Dorsal dististyle slender, the tip acute. Ventral dististyle, *vd*, relatively small, dark coloured, its area about equal in extent to the total area of basistyle; rostral prolongation small, relatively short, only a little

longer than the rostral spines, these latter placed close together on face of prolongation near base. Gonapophyses, *g*, with mesal-apical lobes of moderate length, the tips acute.

Hab. Peru Junin).

Holotype, ♂ Huasahuasi, Tarma, altitude 2800 metres, April 13, 1940. (*Woytkowski*). *Allotopotype*, ♀, April 24, 1940. *Paratopotypes*, 4 ♂♀, April 21–24, 1940.

Limonia (Rhipidia) succentiva is closest to *L. (R.) profana*, sp. n., from which it differs conspicuously in the structure of the male hypopygium. In other regards, the narrowly blackened femoral tips of the present fly, together with the longer antennæ and flagellar branches, provide further characters for separation of the two species.

Limonia (Rhipidia) vafra, sp. n. (Fig. 11.)

General coloration of the mesonotal præscutum obscure yellow, with three broad, dark brown stripes, the lateral borders further darkened; antennæ (male) with nine bipectinate flagellar segments, the branches relatively short; antennæ (female) with relatively short flagellar branches, the pedicels of the segments white; legs brownish black; wings brown, the costal border variegated with darker brown and pale, the latter areas much smaller than the former; male hypopygium with the lobe of basistyle stout on basal half, the distal portion abruptly narrowed; rostral prolongation of ventral dististyle long and slender, the two spines at base of prolongation.

Male.—Length about 6–7 mm.; wing 6–8 mm.; antenna about 2–2.3 mm.

Female.—Length about 5.5–6 mm.; wing 6.5–6.8 mm.; antenna about 1.5 mm.

Rostrum and palpi black. Antennæ relatively short, in male with nine bipectinate segments; first flagellar segment with a simple lobe only; flagellar segments two to ten, inclusive, each with two relatively short branches, the longest about twice the segment or slightly less; antepenultimate segment with branches unequal in length, one being much shorter; apical segment simple and only

a little longer than the penultimate ; basal enlargements and branches of segments black, the pedicels white to brownish white. In female, antennæ merely pectinate, the flagellar segments excepting the last produced into a lobe that is about equal in length to the basal swelling itself, on the outer segments even smaller ; basal enlargements black, the apical pedicels white to brownish white ; both the branches and apical pedicels longer than in the corresponding sex of *variicosta*, which moreover has the apical pedicels blackened like the basal enlargements. Head dark grey ; anterior vertex in male reduced to a linear strip that is subequal in width to about a single row of ommatidia ; in female, anterior vertex a trifle wider though still narrow.

Pronotum brownish black. Mesonotal præscutum with the ground obscure yellow or brownish yellow, with three broad dark brown stripes, the median one especially wide, restricting the posterior interspaces to narrow lines ; lateral and cephalic præscutal margins similarly infuscated ; scutal lobes dark brown, the median area obscure yellow, the colour narrowly produced on to the central portion of scutellum, which is otherwise dark brown ; postnotum dark brown. Pleura brown above, yellow on ventral portion, with two black longitudinal stripes, the dorsal one broad, extending from the cervical region to the base of abdomen, the ventral stripe very narrow, occupying the sternopleurite and continued above the mid-coxæ on to the meron. Halteres blackened, base of stem narrowly yellow. Legs with coxæ yellow, the fore pair darkened on basal portion ; trochanters yellow ; remainder of legs brownish black to black, the femoral bases restrictedly brightened. Wings of male with the ground-colour brown, the costal border with five major darker brown areas that are separated by much narrower pale markings ; cord and outer end of cell 1st M_2 more or less distinctly bordered by darker brown ; third costal darkening (at origin of *Rs*), separated from the fourth (at fork of *Sc*) ; veins dark brown, paler in the whitened costal interspaces. In female, the dark posterior portion of wing is more variegated with pale areas, including the centre of cell 1st M_2 , before cord and beyond outer end of cell 1st M_2 ,

and in outer end of cell 1st *A*. Venation: *Sc* long, *Sc*₁ ending about opposite one-half to two-thirds the length of *Rs*, *Sc*₂ at its tip; cell 1st *M*₂ rectangular; *m-cu* close to fork of *M*.

Abdominal tergites dark brown, the posterior borders of segments and the hypopygium brownish black; in cases, tergites uniformly brownish black to black; sternites light yellow, the posterior borders broadly infuscated, the outer segments uniformly darkened. Male hypopygium (fig. 11) with the tergite, *9t*, narrow, its median caudal portion ill-delimited. Basistyle, *b*, and its lobe dark coloured, the latter stout on basal half, the distal portion produced into a much more slender lobe that is provided with numerous small setæ. Dorsal dististyle slender, its tip acute. Ventral dististyle, *vd*, relatively small, its total area subequal to that of basistyle, the rostral prolongation long and slender, with the two spines placed at extreme base; spines subequal in length, placed close together, arising from small separate tubercles; apex of prolongation bearing two very strong setæ. Mesal-apical lobe of gonapophysis, *g*, gently curved, blackened.

Hab. Peru (Junin).

Holotype, ♂, Carpapata, Tarma, altitude 2600 metres, May 6, 1940 (*Woytkowski*). *Allotopotype*, ♀, May 1, 1940. *Paratopotypes*, 6 ♂♀, May 1-15, 1940; *paratypes*, 2 ♂♂, Huasahuasi, altitude 2800 metres, April 20, 1940 (*Woytkowski*).

The most similar species is *Limonia (Rhipidia) variicosta* Alexander, of northern Panama, which is still known to me only in the female sex. This latter differs from the same sex of the present fly in details of coloration and in the structure and coloration of the antennæ, as described above.